

Building Bridges, Not Barriers:

Embracing Upstream Support for Lasting Results



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Why does upstreaming matter (to an embedded vendor)?



Embedded Si = Resource Constrained + Long Lifecycle

- Developers must optimize for their application
- Developers must trust 1,000s lines of code
- Developers cannot simply use vendor locked SW

Upstreaming
Enables ...



Scalability



SW Quality



Longevity



TEXAS INSTRUMENTS

TI's upstreaming journey | 20+ years of learning

100s of industry developers

2003 TI engages in Open Source. & upstream Industry's 1st Linux 802.11 driver.

2008-9 TI enables Beagle board & joins Linaro. TI opens device collaterals & board design to the community.

2010-12 Joins Yocto project, migrates all SDKs to Yocto. TI enables panda board, publishes Android for non-mobile

1,000s of industry developers

2012 BeagleBoard.org launches Beaglebone Black.

2015 Enables A15 based SoC Beagle X15 boards.

2020-21 TI launches AM6x family of low-cost, low-power SoCs. BeagleBoard.org launches Beagle AI64.

10,000s of industry developers

2022 TI celebrates 10 years of continuous LTS kernel support on AM335

2023 Enabled Multi-distros, open source AI & networking projects for TI platforms.

2024 BeagleBoard.org launches BeagleY-AI.



Open Source Standards



Multiple "open" Distros



yocto
PROJECT



open source
hardware



Zephyr



JAILHOUSE

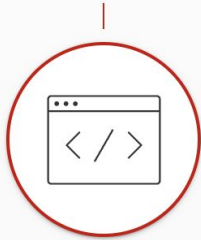


TEXAS INSTRUMENTS

Customer experience is a competitive advantage

Software

Choose the right Arm based-processors SDK combination for your next heterogeneous multi-core design. →



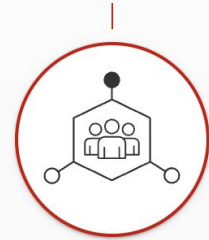
TI Developer Zone

Access and download all the development tools, software, and training you need to easily develop, debug, and analyze code in the cloud or on your desktop. →



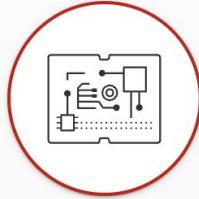
Partners

Our curated partner ecosystem is a worldwide community of hardware, software, tools and training experts to help you complete your Arm based processor designs. →



Hardware

Explore our broad portfolio of starter kits, modules, and EVMs and move from prototype to production in no time. →



Educational resources

Get started with processor academies to access guided examples, demos, step by step tutorials and video training. →



What's next? Collaboration to dispel “shortfalls”

Collaborate @



open source project



IEEE TSN

OpenSSL
Cryptography and SSL/TLS toolkit



- Break down barriers together and **innovate with Open Platforms**
 - Build reference stack and end to end community backed hardware platforms.
- Resolve and standardize the **automotive industry** use cases with Linux.
 - Safety Certification, Performance (Early KPIs: boot time, chime, display, GPU), Power Management.
- Enable **Low Latency systems** with Linux and RTOS (open source)
 - System Tradeoff for low latency systems (FreeRTOS / Zephyr / ThreadX)
 - Collaborate to harden the SMP and AMP use cases and stacks for networking with RTOS.
- **Standardize tools and performance** metrics.
 - Standardize methodology & tools for SoC evaluation.
 - Standard performance benchmark metrics w/ same nomenclature.



Energy efficiency



Functional safety & security



Unified software development kit



Edge AI & edge computing



Integrated precision sensing & control

011100
100010
001111

Networking

